FESHM 8080: AIR EMISSIONS CONTROL PROGRAM

Revision History

Author	Description of Change	Revision No. & Date
Amber Kenney	Added revised Lifetime Operating Permit. Permit issued 4/24/12 revised to no longer include operations of one 15 mmBtu/hour boiler, open top vapor degreaser and collider detector facility.	May 17, 2012
Amber Kenney	Revision 1, Added FESHM Chapter formatting template, remove reference to DOE O 450.1, updated permitted emission sources, added appendix on stationary internal combustion engines, inserted most recent Lifetime Operating Permit, changed permit questionnaire to a flow chart, added a form for new/modified air emission sources, and editorial changes.	March 2012
Teri Dykhuis	Revision 0, Initial release Chapter 8080	October 2006

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1.0 INTRODUCTION

The purpose of this chapter is to ensure that air emissions originating from Fermilab operations comply with United States Environmental Protection Agency (USEPA), Illinois Environmental Protection Agency (IEPA), and Kane and DuPage counties air pollution regulations, including all conditions listed in the Fermilab Illinois Air Pollution Control Operating Permit (referred to as a Lifetime Operating Permit) issued by the IEPA Division of Air Pollution Control. The Laboratory shall also comply with all restrictions and requirements on the use of materials (such as ozone depleting substances) regulated by the Clean Air Act and with rules governing the acquisition of fleet vehicles in the Chicago ozone nonattainment area.

Air emissions are regulated under the federal Clean Air Act (CAA) as amended and implemented in Illinois by the Illinois Pollution Control Board (IPCB) and IEPA. Illinois air pollution regulations are found in Subtitle B of Title 35 of the Illinois Administrative Code (IAC) and are summarized by topics applicable to Fermilab in Appendix A. These regulations describe general requirements for air emission units, such as permit requirements, prohibitions on or permits required for open burning, emission monitoring, organic solvent use, and vehicle acquisition requirements in the Chicago ozone nonattainment area. Fermilab intends to comply with these regulations and with the conditions of the Lifetime Operating Permit (see Appendix D) and minimizepollution-causing air emissions to the extent possible .

The Lifetime Operating Permit regulates the operation of the following units:

- Magnet Debonding Oven with Afterburner
- Natural Gas Fired Boiler with Firing Rate of 15 mmBtu/ Hour
- Natural Gas Fired Boiler with Firing Rate of 11.55 mmBtu/ Hour
- Gasoline Dispensing Facility with one 12,000 Gallons Gasoline Storage Tank Equipped with Permanent Submerged Loading, with Stage 1 and Stage 2 Vapor Balance System
- Radionuclide Emission Stacks
- Emergency Standby Diesel Fuel Fired Engine – Generator with Nominal Capacity of 2,220 Horsepower
- Main Injector Particle Production (MIPP) Experiment Gas System
- Cavity Processing Facility which includes: One Buffered Chemical Polishing (BCP) process, and one Electropolishing (EP) process

The permit does not require renewal or reapplication unless requested by the IEPA for certain defined reasons.

2.0 DEFINITIONS

Ambient Air – that portion of the atmosphere that is external to buildings.

Air Toxics – See Hazardous Air Pollutants below.

Chicago Ozone Nonattainment Area – an area designated by EPA as being out of compliance with the National Ambient Air Quality Standard (NAAQS) for ozone. It includes the counties of Cook, DuPage, Kane, McHenry, Will, Lake, Grundy, Lake (Indiana), and Porter (Indiana).

Clean Air Act Section 112(r) list – a list of 77 toxic and 63 flammable substances developed by EPA and mandated by Congress which if used in a process triggers the requirement of having a risk management plan (RMP) in place. These requirements are codified in 40 CFR Part 68; substances are listed at 40 CFR Part 68, Subpart H, Section 68.130.

Clean Fuel Fleet Vehicle – a light duty or heavy duty vehicle that has been certified by EPA meeting the requirements needed for compliance with the state of Illinois Clean Fuel Fleet Program.

Cold Cleaning – the process of cleaning and removing soils from surfaces by spraying, brushing, flushing, or immersion while maintaining the organic solvent below it's boiling point. Wipe cleaning is not included in this definition.

Criteria Air Pollutants – pollutants for which EPA has promulgated National Ambient Air Quality Standards. These are sulfur dioxide, carbon monoxide, nitrogen dioxide, lead, ozone, and particulate matter.

Degreaser – any equipment or system that uses solvent to clean solid objects.

Emission Unit – any part or activity at a stationary source that emits or has the potential to emit any air pollutant.

Emission Source – any equipment or facility of a type capable of emitting specified air contaminants to the atmosphere.

Greenhouse Gas (GHG) - Carbon Dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), hydrofluorocarbons (HFCs), perfluorocarbonds (PFCs), and other fluorinated greenhouse gases as defined by 40 CFR 98.

Hazardous Air Pollutants (HAPs) – EPA refers to chemicals that cause serious health and environmental hazards as hazardous air pollutants or air toxics. There are 188 of these chemicals and chemical classes listed in Section 112(b) of the Clean Air Act, for which emission standards have been established.

Major Source – any stationary source that has the potential to emit 100 tons per year or more of any criteria air pollutant, 10 tons per year or more of any one of the 188 HAPs, or 25 tons of any combination of HAPs.

Mobile Source – road vehicles (e.g. automobiles, trucks, and motorcycles) and nonroad vehicles (e.g. trains, airplanes, agricultural equipment, industrial equipment, construction vehicles, off-road motorcycles, and marine vessels).

Monitor – to measure and record.

Ozone Depleting Substances – any of several classes of organic compounds including chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), halons, and related chlorinated compounds that have been designated by EPA as contributing to the destruction of stratospheric ozone.

Specified Air Contaminant - any air contaminant which has an emission standard or other specific limitations listed in 35 IAC Subtitle B and any contaminant (for example, carbon monoxide, particulate matter, nitrogen oxides, sulfur dioxides, lead, volatile organic materials, total particulates, organic material, dioxins, furans, fluorides, hydrogen chloride, hydrogen sulfide, sulfuric acid mist, or sulfur compounds) regulated in Illinois pursuant to Section 9.1 of the Act. In addition, it includes most of the 188 HAPs regulated under and listed in Section 112(b) of the Clean Air Act Amendments of 1990.

Stationary Source – any building, structure, facility, or installation that emits or may emit any air pollutant.

3.0 RESPONSIBLILITIES

3.1 Division/Section/Center Heads

Division/Section/Center Heads shall ensure that:

- Permits are obtained for air emission units within their organizations as required by the applicable regulations (see Appendix A for topical list of regulatory requirements and Appendix B for list of equipment that is exempt from permitting).
- The rationale for any determination that an air emission unit within the organization is exempt from permitting is documented (see Appendix B).
- Air emission units listed in the permit (see Appendix D) are operated in compliance with permit conditions (for example: conduct emission monitoring; install, operate, and maintain any required control systems; fulfill record keeping and reporting requirements as mandated in the permit; transmit all necessary reports to ES&H Section; and report any permit noncompliances to the ES&H Section immediately).
- All exempt air emission units are operated in compliance with applicable regulations.
- All future operations are reviewed, in consultation with the ES&H Section, for the necessity of new or revised air permits (see Appendix C for construction permitting decision making questionnaire) and, if a permit is required, sufficient information to complete an application is submitted to the ES&H Section.
- Submit an Air Pollution Emission Source Submittal form for all new or modified existing air emission sources (See Appendix C) prior to the start of construction or modification.

- Emissions from all applicable airborne radiological emission units are characterized and monitored as required to maintain compliance with the radionuclide NESHAP and DOE orders and to maintain all emissions as low as reasonably achievable.
- Procedures are written and approved for operating the monitoring system, identifying a person who will operate and maintain the system, and providing a quality assurance/quality control program.
- The storage and usage of any materials meets the compliance requirements for Clean Air Act Section 112(r), cold cleaning degreasers, coating operations, and ozone depleting substances (see Appendix A).
- Acquisition of Class I Ozone Depleting Substances (see 40 CFR Part 82 for listing) is prohibited unless specifically approved by the D/S/C Senior Safety Officer (SSO).

3.2 Business Services Section

Business Services Section shall ensure that:

- Any vehicle acquisitions comply with Illinois Clean Fuel Fleet requirements (see Appendix A).

3.3 ES&H Section, Environmental Protection Group

ES&H Section, Environmental Protection (EP) Group shall ensure that:

- Consultation is given to D/S/C that are evaluating new activities to assist in determining whether an air pollution construction permit is necessary or whether a modification should be requested for the Lifetime Operating Permit.
- An air related permit application is reviewed for completeness and accuracy and submittal to IEPA via DOE.
- Copies of approved permits are provided to applicable Divisions/Sections.
- Files of all environmental permit applications, permits, and related documents are maintained.
- Environmental air permit annual emission reports are submitted in a timely manner.

3.4 ES&H Section, Safety & Health Group

ES&H Section, Safety & Health Group is responsible for asbestos removal projects. They shall ensure that:

- Air samples are collected
- Records are generated to document compliance with the asbestos NESHAP
- Annual notification to IEPA of the total amount of asbestos removed during renovation or demolition is prepared.
- Procedures involving asbestos characterization, reporting, and removal are developed and maintained

3.5 ES&H Section, Radiation Protection Group

ES&H Section, Radiation Protection Group shall, with regard to radionuclides, calculate and report the estimated committed effective dose equivalent to the maximally exposed member of the public. This includes the performance of appropriate characterization measurements as well as the maintenance and operation of the associated instrumentation. In addition, this team shall arrange for the estimated dose calculations to be transmitted to the ES&H Section, Environmental Protection Group who shall ensure that an appropriate NESHAPs Report is filed with the USEPA, IEPA, and DOE.

4.0 PROGRAM DESCRIPTION

Fermilab air emissions are governed by air pollution control regulations as summarized by topic in Appendix A, by DOE orders, and by the Fermilab Lifetime Operating Permit (see Appendix D). Divisions/Sections develop and implement, as needed, procedures to ensure compliance with these requirements.

The Air Emissions Inventory lists all air emission sources located at Fermilab (Document #2015), whether permitted or exempt from permitting. The current Lifetime Operating Permit, issued on April 24, 2012 allows for the operation of the following emission unit(s) and /or air pollution control equipment:

- Magnet Debonding Oven with Afterburner
- One 15 mmBtu/ Hour Natural Gas Fired Boilers
- One 11.55 mmBtu/ hour Natural Gas-Fired Boiler
- Gasoline Dispensing Facility with one 12,000 Gallons Gasoline Storage Tank Equipped with Permanent Submerged Loading, with Stage 1 and Stage 2 Vapor Balance System,
- Radionuclide Emission Stacks
- One Emergency Standby Diesel Fuel Fired Engine – Generator with Nominal Capacity of 2,220 Horsepower
- Main Injector Particle Production (MIPP) Experiment Gas System
- One Cavity Processing Facility which includes:
    - One Buffered Chemical Polishing (BCP) process
    - One Electropolishing (EP) Process

All other existing air emissions sources are exempt from permitting. The D/S/C operating an exempt emission source documents the specific applicable exemption, and forwards the information to the EP Group for inclusion in the inventory. A permitting exemption only relieves the owner from permitting; emission sources must still comply with the relevant IEPA or USEPA regulations.

When a new air emission source or modification to an existing source is proposed, the D/S/C consults with the ES&H Section to determine whether a construction permit will be required (see Appendix C for the decision making flow chart).

The D/S/C operating the above listed permitted emission sources develops procedures to ensure compliance with the Lifetime Operating Permit (see Appendix D) and for submitting all necessary documentation to the ES&H Section in a timely manner.

The ES&H Section submits the environmental air permit annual emission reports to the DOE in a timely manner so that the reports may be transmitted to IEPA by the regulatory due date. In addition, the ES&H Section calculates and reports the estimated committed effective dose equivalent to the maximally exposed member of the public and reports this to the DOE for transmittal to the USEPA, IEPA, and DOE Headquarters by the regulatory deadline.

5.0 Appendix A

The following is a summarized description, listed alphabetically by topic, of the regulatory requirements governing existing or potential air emissions at Fermilab.

5.1 Asbestos [35 IAC Part 228]

The asbestos NESHAP standards require that the IEPA be notified before large asbestos removal projects (involving more than 260 feet of pipe insulation or 160 square feet of other material) are begun. Renovation or demolition involving asbestos-containing material must be done in compliance with the work practice standards in the above-designated regulations.

5.2 1990 Clean Air Act Amendments, Section 112(r) See Toxic or Flammable Substance below.

5.3 Coating Operations [35 IAC, Part 218, Subpart F]

These regulations limit emissions resulting from coating ("Coating" means, for purposes of 35 Ill. Adm. Code 218 and 219, a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, adhesives, thinners, diluents, and inks.) operations (for example spray paint booths). The limits are expressed in units of Volatile Organic Material (VOM) per volume of coating as applied at each coating applicator. Compliance with this Subpart is demonstrated through the applicable coating analysis test methods and procedures specified in Section 218.105(a) and the recordkeeping and reporting requirements specified in Section 218.211(c) except where noted.

5.4 Cold Cleaning [35 IAC, Part 218, Subpart E]

These regulations limit the maximum vapor pressure of organic solvents that can be used in cold cleaning operations in the Chicago ozone nonattainment area (this includes Kane and DuPage counties where Fermilab is located). As of March 15, 2001, no operation of a cold cleaning degreaser in the Chicago ozone nonattainment area can utilize a cleaner with a solvent vapor pressure that exceeds 1.0 mm Hg (0.019 psi) measured at 20°C (68°F). All persons subject to the above requirement must retain for three years records that include for each purpose: 1) name and address of solvent supplier; 2) date of purchase; 3) type of solvent; and 4) vapor pressure of solvent measured at 20°C (68°F). The cleaning of electronic components is exempt from these requirements, and wipe cleaning is not included in the definition of cold cleaning.

5.5 Criteria Pollutants [35 IAC Subtitle B; 40 CFR 50]

Fermilab has a number of sources (magnet debonding oven, Besco boilers, gasoline dispensing facility, radionuclide emissions stacks, and the open top vapor degreaser) of criteria pollutants (sulfur dioxide, carbon monoxide, nitrogen dioxide, lead, ozone, and particulate matter). IEPA regulations establish limits for criteria pollutants and enforce these limits through a permit system. The Fermilab Lifetime Operating Permit establishes limits for all permitted criteria pollutant sources on site.

5.6 Fleet Vehicles [35 IAC Part 241]

IEPA requires that a specified percentage of all annually acquired light duty and heavy-duty vehicles (including leasing) be clean fuel fleet certified. Some vehicles are exempted from meeting the percentage, but all must be reported to IEPA on an annual basis. These regulations apply only to fleets based in the Chicago ozone nonattainment area (this includes Kane and DuPage counties where Fermilab is located).

5.7 Hazardous Air Pollutants (HAPs) [35 IAC Subtitle B; 40 CFR 61]

Fermilab has a few sources (radionuclide emission stacks, magnet debonding oven) of HAPs (radionuclides). Emission limits on these sources are also regulated by permit (see Radionuclides below) for Fermilab. The Clean Air Act requires the EPA to establish a National Emission Standard (NES) for each HAP, referred to as NESHAP.

5.8 New Air Emission Sources [35 IAC Part 201.102]

Before any equipment that can emit criteria or hazardous air pollutants can be purchased, constructed, modified, or operated, an IEPA air construction and/ or operating permit must be obtained, unless the emission unit is specifically exempted (see Appendix B). In addition, many activities utilizing air pollution control devices require an IEPA permit. Before proceeding with any above-mentioned activities, submit the "New/ Modified Air Pollution Emission Source" form (see Appendix C) to the ES&H Section EP Group.

5.9 Ozone Depleting Substances (ODS) [40 CFR 82]

These regulations cover federal procurement, usage, labeling, recycling, and alternatives for chemicals designated by EPA as contributing to the destruction of stratospheric ozone. They also require that all chillers, air conditioners (including mobile source units) and other refrigeration units be serviced by EPA-certified technical personnel. In addition, these regulations cover annual leak rate limitations and associated repair/ replacement requirements.

A statutory venting prohibition requires that all ODSs removed from units be recovered for recycling. As of May 14, 2001 purchasers of newly manufactured or imported Class I ODSs for laboratory or analytical uses must submit a one-time-per year certification to suppliers stating that the ODSs will not be used in manufacturing or resold.

5.10 Radionuclide [35 IAC Subtitle B; 40 CFR 61, Subpart H]

The NESHAP regulation establishes standards for radionuclide emissions (other than point sources of radon-220 and –222) from DOE facilities and imposes monitoring, reporting, and record keeping requirements. The NESHAP regulation limits the effective dose equivalent (EDE) to the maximally exposed member of the public due to radionuclide emissions from all sources to 10 mrem/ year and requires a continuous monitoring of any stack that has the potential to produce an EDE of 0.1 mrem/ year. In addition, Fermilab has an internal policy that requires air emissions to be maintained as low as reasonably achievable (ALARA) and has set an internal goal of 1 mrem/ year to the maximally exposed individual. Fermilab is responsible for the measurement of annual radionuclide emissions. The computer simulation model CAP-88PC is used to calculate the dose.

5.11 Toxic or Flammable Substances [40 CFR Part 68]

The Clean Air Act Section 112(r) requires that any process containing toxic or flammable substance on the 112(r) list (substances are listed at 40 CFR Part 68, Subpart F, Section 68.130) that exceeds the specified threshold to have a Risk Management Plan (RMP) on file with IEPA. The RMP must be on file prior to establishing a process with a listed substance on site.

6.0 Appendix B

6.1 Exemptions from State Permitting Requirements (Title 35 IAC, Subtitle B, Chapter I, Subchapter a, Part 201, Subpart C, Section 201.146)

Construction or operating permits are not required for the classes of equipment and activities listed below. **The permitting exemptions in this Section do not relieve the owner or operator of any source from any obligation to comply with any other applicable requirements:**

a) Air contaminant detectors or recorders, combustion controllers or combustion shutoffs;

b) Air conditioning or ventilating equipment not designed to remove air contaminants generated by or released from associated equipment;

c) Each fuel burning emission unit for indirect systems and for heating and reheating furnace systems used exclusively for residential, or commercial establishments using gas and/ or fuel oil exclusively with a design heat input capacity of less than 14.6 MW (50 mmbtu/ hr), except that a permit shall be required for any such emission unit with a design heat input capacity of at least 10 mmbtu/ hr that was constructed, reconstructed or modified after June 9, 1989 and that is subject to 40 CFR 60, subpart D;

d) Each fuel burning emission unit other than those listed in subsection (c) of this Section for direct systems used for comfort heating purposes and indirect heating systems with a design heat input capacity of less than 2930 kW (10 mmbtu/ hr);

e) Internal combustion engines or boilers (including the fuel system) of motor vehicles, locomotives, air craft, watercraft, lifttrucks and other vehicles powered by nonroad engines;

f) Bench scale laboratory equipment and laboratory equipment used exclusively for chemical and physical analysis, including associated laboratory fume hoods, vacuum producing devices and control devices installed primarily to address potential accidental releases;

g) Coating operations located at a source using not in excess of 18,925 1 (5,000 gal) of coating (including thinner) per year;

h) Any emission unit acquired exclusively for domestic use, except that a permit shall be required for any incinerator and for any fuel combustion emission unit using solid fuel with a design heat input capacity of 14.6 MW (50 mmbtu/ hr) or more;

i) Any stationary internal combustion engine with a rated power output of less than 1118 kW (1500 bhp) or stationary turbine, except that a permit shall be required for the following:

1) Any internal combustion engine with a rating at equal to or greater than 500 bhp output that is subject to the control requirements of 35 Ill. Adm. Code 217.388(a) or (b); or

2) Any stationary gas turbine engine with a rated heat input at peak load of 10.7 gigajoules/ hr (10 mmbtu/ hr) or more that is constructed, reconstructed or modified after October 3, 1977 and that is subject to requirements of 40 CFR 60, subpart GG;

j) Rest room facilities and associated cleanup operations, and stacks or vents used to prevent the escape of sewer gases through plumbing traps;

k) Safety devices designed to protect life and limb, provided that a permit is not otherwise required for the emission unit with which the safety device is associated;

l) Storage tanks for liquids for retail dispensing except for storage tanks that are subject to the requirements of 35 Ill. Adm. Code 215.583(a)(2), 218.583(a)(2) or 219.583(a)(2);

m) Printing operations with aggregate organic solvent usage that never exceeds 2,839 l (750 gal) per year from all printing lines at the source, including organic solvent from inks, dilutents, fountain solutions and cleaning materials;

n) Storage tanks of:

1) Organic liquids with a capacity of less than 37,850 l (10,000 gal), provided the storage tank is not used to store any material listed as a hazardous air pollutant pursuant to section 112(b) of the Clean Air Act, and provided the storage tank is not subject to the requirements of 35 Ill. Adm. Code 215.583(a)(2), 218.583(a)(2) or 219.583(a)(2);

2) Any size containing exclusively soaps, detergents, surfactants, waxes, glycerin, vegetable oils, greases, animal fats, sweetener, corn syrup, aqueous salt solutions or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials; or

3) Any size containing virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil or residual fuel oils;

o) Threaded pipe connections, vessel manways, flanges, valves, pump seals, pressure relief valves, pressure relief devices and pumps;

p) Sampling connections used exclusively to withdraw materials for testing and analyses;

q) All storage tanks of Illinois crude oil with capacity of less than 151,400 1 (40,000 gal) located on oil field sites;

r) All organic material-water single or multiple compartment effluent water separator facilities for Illinois crude oil of vapor pressure of less than 34.5 kPa absolute (5 psia);

s) Grain-handling operations, exclusive of grain-drying operations, with an annual grain through-put not exceeding 300,000 bushels;

t) Grain-drying operations with a total grain-drying capacity not exceeding 750 bushels per hour for 5% moisture extraction at manufacturer's rated capacity, using the American Society of Agricultural Engineers Standard 248.2, Section 9, Basis for Stating Drying Capacity of Batch and Continuous-Flow Grain Dryers;

u) Portable grain-handling equipment and one-turn storage space;

v) Cold cleaning degreasers that are not in-line cleaning machines, where the vapor pressure of the solvents used never exceeds 2 kPa (15 mmHg or 0.3 psi) measured at 38°C (100°F) or 0.7 kPa (5 mmHg or 0.1 psi) at 20°C (68°F);

w) Coin-operated dry cleaning operations;

x) Dry cleaning operations at a source that consume less than 30 gallons per month of perchloroethylene;

y) Brazing, soldering, wave soldering or welding equipment, including associated ventilation hoods;

z) Cafeterias, kitchens, and other similar facilities, including smokehouses, used for preparing food or beverages, but not including facilities used in the manufacturing and wholesale distribution of food, beverages, food or beverage products, or food or beverage components;

aa) Equipment for carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, sand blast cleaning, shot blasting, shot peening, or polishing ceramic artwork, leather, metals (other than beryllium), plastics, concrete, rubber, paper stock, wood or wood products, where such equipment is either:

1) Used for maintenance activity;

2) Manually operated;

3) Exhausted inside a building; or

4) Vented externally with emissions controlled by an appropriately operated cyclonic inertial separator (cyclone), filter, electro-static precipitor or a scrubber;

bb) Feed mills that produce no more than 10,000 tons of feed per calendar year, provided that a permit is not otherwise required for the source pursuant to Section 201.142, 201.143 or 201.144;

cc) Extruders used for the extrusion of metals, minerals, plastics, rubber or wood, excluding:

1) Extruders used in the manufacture of polymers;

2) Extruders using foaming agents or release agents that contain volatile organic materials or Class I or II substances subject to the requirements of Title VI of the Clean Air Act; and

3) Extruders processing scrap material that was produced using foaming agents containing volatile organic materials or Class I or II substances subject to the requirements of Title VI of the Clean Air Act;

dd) Furnaces used for melting metals, other than beryllium, with a brim full capacity of less than 450 cubic inches by volume;

ee) Equipment used for the melting or application of less than 22,767 kg/ yr (50,000 lbs/ yr) of wax to which no organic solvent has been added;

ff) Equipment used for filling drums, pails or other packaging containers, excluding aerosol cans, with soaps, detergents, surfactants, lubricating oils, waxes, vegetable oils, greases, animal fats, glycerin, sweeteners, corn syrup, aqueous salt solutions or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials;

gg) Loading and unloading systems for railcars, tank trucks, or watercraft that handle only the following liquid materials: soaps, detergents, surfactants, lubricating oils, waxes, glycerin, vegetable oils, greases, animal fats, sweetener, corn syrup, aqueous salt solutions or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials;

hh) Equipment used for the mixing and blending of materials at ambient temperatures to make water based adhesives, provided each material mixed or blended contains less than 5% organic solvent by weight;

ii) Die casting machines where a metal or plastic is formed under pressure in a die located at a source with a through-put of less than 2,000,000 lbs of metal or plastic per year, in the aggregate, from all die casting machines;

jj) Air pollution control devices used exclusively with other equipment that is exempt from permitting, as provided in this Section;

kk) An emission unit for which a registration system designed to identify sources and emission units subject to emission control requirements is in place, such as the registration system found at 35 Ill. Adm. Code 218.586 (Gasoline Dispensing Operations – Motor Vehicle Fueling Operations) and 35 Ill. Adm. Code 218, Subpart HH (Motor Vehicle Refinishing);

ll) Photographic process equipment by which an image is reproduced upon material sensitized to radiant energy;

mm) Equipment used for hydraulic or hydrostatic testing;

nn) General vehicle maintenance and servicing activities conducted at a source, motor vehicle repair shops, and motor vehicle body shops, but not including:

1) Gasoline fuel handling; and

2) Motor vehicle refinishing;

oo) Equipment using water, water and soap or detergent, or a suspension of abrasives in water for purposes of cleaning or finishing, provided no organic solvent has been added to the water;

pp) Administrative activities including, but not limited to, paper shredding, copying, photographic activities and blueprinting machines. This does not include incinerators;

qq) Laundry dryers, extractors, and tumblers processing that have been cleaned with water solutions of bleach or detergents that are:

1) Located at a source and process clothing, bedding and other fabric items used at the source, provided that any organic solvent present in such items before processing that is retained from cleanup operations shall be addressed as part of the VOM emissions from use of cleaning materials;

2) Located at a commercial laundry; or

3) Coin operated;

rr) Housekeeping activities for cleaning purposes, including collecting spilled and accumulated materials, including operation of fixed vacuum cleaning systems specifically for such purposes, but not including use of cleaning materials that contain organic solvent;

ss) Refrigeration systems, including storage tanks used in refrigeration systems, but excluding any combustion equipment associated with such systems;

tt) Activities associated with the construction, on-site repair, maintenance or dismantlement of buildings, utility lines, pipelines, wells, excavations, earthworks and other structures that do not constitute emission units;

uu) Piping and storage systems for natural gas, propane and liquefied petroleum gas;

vv) Water treatment or storage systems, as follows:

1) Systems for potable water or boiler feedwater;

2) Systems, including cooling towers, for process water, provided that such water has not been in direct or indirect contact with process streams that contain volatile organic material or materials listed as hazardous air pollutants pursuant to section 112(b) of the Clean Air Act;

ww) Lawn care, landscape maintenance and grounds keeping activities;

xx) Containers, reservoirs or tanks used exclusively in dipping operations to coat

objects with oils, waxes or greases, provided no organic solvent has been mixed with such materials;

yy) Use of consumer products, including hazardous substances as that term is defined in the Federal Hazardous Substances Act (15 USC 1261 et seq.), where the product is used at a source in the same manner as normal consumer use;

zz) Activities directly used in the diagnosis and treatment of disease, injury or other medical condition;

aaa) Activities associated with the construction, repair or maintenance of roads or other paved or open areas, including operation of street sweepers, vacuum trucks, spray trucks and other vehicles related to the control of fugitive emissions of such roads or other areas;

bbb) Storage and handling of drums or other transportable containers, where the containers are sealed during storage and handling;

ccc) Activities at a source associated with the maintenance, repair or dismantlement of an emission unit or other equipment installed at the source, not including the shutdown of the unit or equipment, including preparation for maintenance, repair or dismantlement, and preparation for subsequent startup, including preparation of a shutdown vessel for entry, replacement of insulation, welding and cutting, and steam purging of a vessel prior to startup;

ddd) Equipment used for corona arc discharge surface treatment of plastic with a power rating of 5 kW or less or equipped with an ozone destruction device;

eee) Equipment used to seal or cut plastic bags for commercial, industrial or domestic use;

fff) Each direct-fired gas dryer used for a washing, cleaning, coating or printing line, excluding:

1) Dryers with a rated heat input capacity of 2930 kW (10 mmbtu/ hr) or more; and

2) Dryers for which emissions other than those attributable to combustion of fuel in the dryer, including emissions attributable to use or application of cleaning agents, washing materials, coatings or inks or other process materials that contain volatile organic material are not addressed as part of the permitting of such line, if a permit is otherwise required for the line;

ggg) Municipal solid waste landfills with a maximum total design capacity of less than 2.5 million Mg or 2.5 million m^3 that are not required to install a gas collection and control system pursuant to 35 Ill. Adm. Code 220 or 800 through 849 or Section 9.1 of the Act;

hhh) Replacement or addition of air pollution control equipment for existing emission units in circumstances where:

1) The existing emission unit is permitted and has operated in compliance for the past year;

2) The new control equipment will provide equal or better control of the target pollutants;

3) The new control device will not be accompanied by a net increase in emissions of any non-targeted criteria air pollutant;

4) Different State or federal regulatory requirements or newly proposed regulatory requirements will not apply to the unit; and
BOARD NOTE: All sources must comply with underlying federal regulations and future State regulations.

5) Where the existing air pollution control equipment had required monitoring equipment, the new air pollution control equipment will be equipped with the instrumentation and monitoring devices that are typically installed on the new equipment of that type.
BOARD NOTE: For major sources subject to Section 39.5 of the Act, where the new air pollution control equipment will require a different compliance determination method in the facility's CAAPP permit, the facility may need a permit modification to address the changed compliance determination method;

iii) Replacement, addition, or modification of emission units at facilities with federally enforceable State operating permits limiting their potential to emit in circumstances where:

1) The potential to emit any regulated air pollutant in the absence of air pollution control equipment from the new emission unit, or the increase in the potential to emit resulting from the modification of any existing emission unit, is less than 0.1 pound per hour or 0.44 tons per year;

2) The raw materials and fuels used or present in the emission unit that cause or contribute to emissions, based on the information contained in Material Safety Data Sheets for those materials, do not contain equal

to or greater than 0.01 percent by weight of any hazardous air pollutant as defined under section 112(b) of the federal Clean Air Act;

3) The emission unit or modification is not subject to an emission standard or other regulatory requirement pursuant to section 111 of the federal Clean Air Act;

4) Potential emissions of regulated air pollutants from the emission unit or modification will not, in combination with emissions from existing units or other proposed units, trigger permitting requirements under Section 39.5, permitting requirements under section 165 or 173 of the federal Clean Air Act, or the requirement to obtain a revised federally enforceable State operating permit limiting the source's potential to emit; and

5) The source is not currently the subject of a Non-compliance Advisory, Clean Air Act Section 114 Request, Violation Notice, Notice of Violation, Compliance Commitment Agreement, Administrative Order, or civil or criminal enforcement action, related to the air emissions of the source;

jjj) Replacement, addition, or modification of emission units at permitted sources that are not major sources subject to Section 39.5 of the Act and that do not have a federally enforceable State operating permit limiting their potential to emit, in circumstances where:

1) The potential to emit of any regulated air pollutant in the absence of air pollution control equipment from the new emission unit, or the increase in the potential to emit resulting from the modification of any existing emission unit is either:

A) Less than 0.1 pound per hour or 0.44 tons per year; or

B) Less than 0.5 pound per hour, and the permittee provides prior notification to the Agency of the intent to construct or install the unit. The unit may be constructed, installed or modified immediately after the notification is filed;

2) The emission unit or modification is not subject to an emission standard or other regulatory requirement under section 111 or 112 of the federal Clean Air Act;

3) Potential emissions of regulated air pollutants from the emission unit or modification will not, in combination with the emissions from existing units or other proposed units, trigger permitting requirements

under Section 39.5 of the Act or the requirement to obtain a federally enforceable permit limiting the source's potential to emit; and

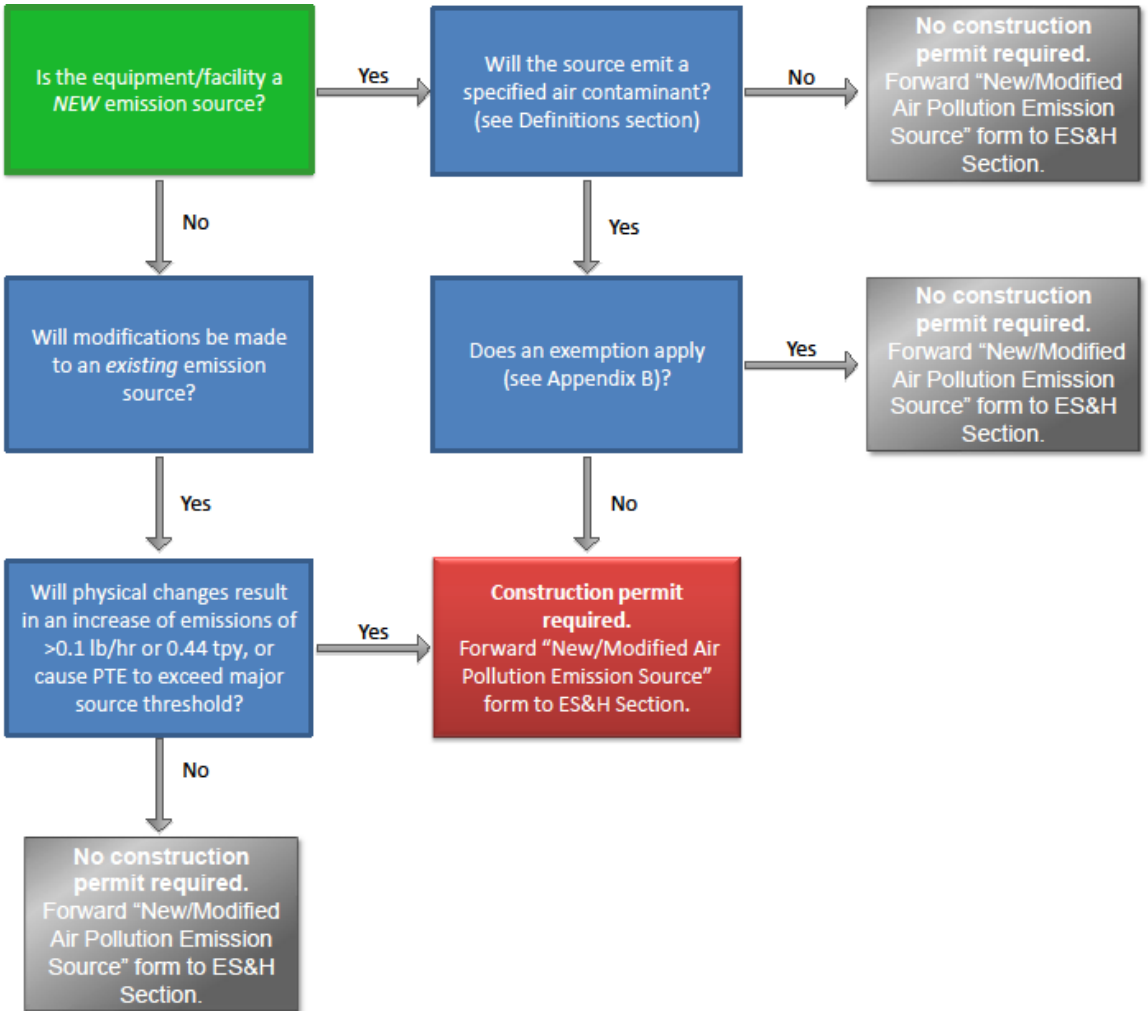
4) The source is not currently the subject of a Non-compliance Advisory, Clean Air Act Section 114 Request, Violation Notice, Notice of Violation, Compliance Commitment Agreement, Administrative Order, or civil or criminal enforcement action, related to the air emissions of the source;

kkk) The owner or operator of a CAAPP source is not required to obtain an air pollution control construction permit for the construction or modification of an emission unit or activity that is an insignificant activity as addressed by Section 201.210 or 201.211 of this Part. Section 201.212 of this Part must still be followed, as applicable. Other than excusing the owner or operator of a CAAPP source from the requirement to obtain an air pollution control construction permit for the emission units or activities, nothing in this subsection shall alter or affect the liability of the CAAPP source for compliance with emission standards and other requirements that apply to the emission units or activities, either individually or in conjunction with other emission units or activities constructed, modified or located at the source;

lll) Plastic injection molding equipment with an annual through-put not exceeding 5,000 tons of plastic resin in the aggregate from all plastic injection molding equipment at the source, and all associated plastic resin loading, unloading, conveying, mixing, storage, grinding, and drying equipment and associated mold release and mold cleaning agents.

7.0 Appendix C

7.1 Air Pollution Control Construction Permitting Decision Making Flow Chart



7.2 New or Modified Air Pollution Emission Source Form

Download the form here: http://esh-docdb.fnal.gov/cgi-bin/ShowDocument?docid=540.

Air Emissions Control Program
Rev. 4/2012

New/Modified Air Pollution Emission Source

1	Owner's Name	
2	D/S/C	
3	Department/Group	
4	Date	

Circle One

5 NEW EXISTING- modification

6	Source Name	
7	Equipment Type	
8	Location	
9	Expected Construction or	
10	Manufacturer/Make/ Model	
11	Capacity/Size	
12	Fuel/Material Used	
13	Air Pollutin Control Equipment	

14 Permit Required? YES NO

Exemption Citation: 35IAC146._____

15 Additional Information:

WARNING. This paper copy may be obsolete soon after it is printed. The current version of this document is found at http://esh-docdb.fnal.gov/cgi-bin/ShowDocument?docid=540.

8.0 APPENDIX D

8.1 Stationary Internal Combustion Engines

The US EPA published two rules that govern stationary Internal Combustion Engines (ICE). The standards, New Source Performance Standard (NSPS) and National Emission Standard for Hazardous Air Pollutants (NESHAP), limit emissions of nitrogen oxides (NOx), particulate matter (PM), carbon monoxide (CO), non-methane hydrocarbons (NMHC), sulfur oxides (SOx), and hazardous air pollutants (HAPs).

NSPS apply to all stationary ICE located at Fermilab that are constructed, modified, or reconstructed after 2006. The NESHAP applies to all stationary ICE regardless of construction date. The NSPS and NESHAP rules are broken down by engine type (compression ignition (CI), spark ignition (SI) or combustion turbine).

In order for Fermilab to be sure it purchases/uses only compliant engines, D/S/Cs should only purchase "certified" engines. In this way Fermilab can ensure only complying engines are installed. However, there may be cases where non-certified engines are purchased. In those cases extra requirements, including notifications and performance testing, may be required. CI ICE, SI ICE and combustion turbines all have specific emission standards based on power rating, fuel fired, and manufacture date.

8.2 Definitions

Certified Stationary Internal Combustion Engine means an engine that belongs to an engine family that has a certificate of conformity that complies with the emission standards and requirements in 40 CFR 60, 40 CFR 90, 40 CFR 1048, or 40 CFR 1054, as appropriate.

Combustion Turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simply cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

Compression Ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Emergency Stationary ICE means any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source if the facility runs on its owner power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc. Stationary ICE used for peak shaving are not emergency engines. Stationary ICE used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are NOT considered emergency engines.

Spark Ignition means relating to a gasoline, natural gas, or liquefied petroleum gas fueled engine or any other type of engine with a spark plug (or other sparking device) and with operating

characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation.

Stationary Internal Combustion Engine (ICE) means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE include reciprocating ICE (RICE), rotary ICE and other ICE, except combustion turbines.

8.3 Responsibilities

8.3.1. D/S/C Environmental Officer

D/S/C Environmental Officers shall consult with the ES&H Section EP Group before any stationary ICE is purchased. D/S/Cs should purchase ICEs certified to the appropriate emission standards described in the NSPS and NESHAP rules. EOs shall also provide the following to the ES&H Section EP Group:

- certification documentation, or, for non-certified ICE, documentation showing compliance with the appropriate emission standards
- engine make/model
- manufacture date or model year
- location
- power (kW or HP)
- engine type
- maintenance schedule.
- other documentation or recordkeeping as requested by EP Group.

8.3.2. ES&H Section Environmental Protection Group

The ES&H Section EP Group will provide guidance to D/S/C EOs prior to purchasing stationary ICE in order to ensure only compliant engines are constructed. Also, the EP Group will instruct EOs in appropriate documentation and recordkeeping. In addition, keep inventory of ICE subject to NSPS and NESHAP and file the appropriate documentation.

9.0 APPENDIX E

9.1 LIFETIME OPERATING PERMIT – NESHAP and NSPS SOURCE – REVISED

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 NORTH GRAND AVENUE EAST
P.O. Box 19506, SPRINGFIELD, ILLINOIS 62794-9506
Pat Quinn, Governor
John J. Kim, INTERIM DIRECTOR
(217) 785-1705
LIFETIME OPERATING PERMIT – NESHAP and NSPS SOURCE -- REVISED

U.S. Department of Energy
Attn. U.S. Department of Energy Fermi Site Office Manager
Wilson and Kirk Roads, P.O. Box 2000
Batavia, Illinois 60510

Application No.: 79070012 I.D. No.: 043807AAI
Applicant's Designation: Date Received: March 8, 2012
Subject: Fermilab Site
Date Issued: April 24, 2012 Expiration Date: See Condition 1
Location: Wilson and Kirk Roads, Batavia, DuPage County

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/ or air pollution control equipment consisting of:

Magnetic Debonding Oven with Afterburner
One 15 mmBtu/ Hour Natural Gas-Fired Boilers
One 11.55 mmBtu/ hour Natural Gas-Fired Boiler
Gasoline Dispensing Facility with one 12,000 Gallons Gasoline Storage Tank
Equipped with Permanent Submerged Loading, with Stage 1 and Stage 2 Vapor Balance System
Radionuclide Emission Stacks
One Emergency Standby Diesel Fuel Fired Engine – Generator with Nominal Capacity of 2,220 Horsepower
Main Injector Particle Production (MIPP) Experiment Gas System
One Cavity Processing Facility which includes:
One Buffered Chemical Polishing (BCP) process
One Electropolishing (EP) process

pursuant to the above-referenced application. This permit is subject to standard conditions attached hereto and the following special condition(s):

1a. This permit shall expire 180 days after the Illinois EPA sends a written request for the removal of this permit.

b. This permit shall terminate if it is withdrawn or is superseded by a revised permit.

2a. The 11.55 mmBtu/ hour boiler is subject to the New Source Performance Standard (NSPS) for Small Industrial – Commercial – Institutional Steam Generating Unis, 40 CFR Part 60 Subparts A and Dc. The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.

b. The Permittee shall perform the applicable monitoring, reporting and recordkeeping as required by 40 CFR 60.47c and 60.48c.

c. At all times the Permittee shall, to the extent preacticable, maintain and operate the boilers, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions.

3a. The Gasoline Dispensing Facility is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories: Gasoline Dispensing Facilities, 40 CFR Part 63 Subparts A and CCCCCC. The Illinois EPA is administering NESHAP in Illinois on behalf of the USEPA under a delegation agreement.

b. The source shall comply with the applicable requirements of 40 CFR Part 63 Subparts A and CCCCCC.

4a. This Department of Energy facility (DOE) is subject to a National Emission Standard for Hazardous Air Pollutants (NESHAP) for radionuclide emissions, 40 CFR 61, Subparts A and H.

b. Pursuant to the National Emission Standard for Hazardous Air Pollutants, emissions of radionuclides shall not exceed those amounts that cause a dose equivalent to 10 mrem/ yr to any member of the public. Dose due to radon-220, radon-222, and their respective decay products are excluded from these limits.

c. The Permittee shall demonstrate compliance with NESHAP using the procedures specified by 40 CFR 61.93

d. The Permittee shall fulfill applicable notification, record keeping and reporting requirements for the NESHAP, 40 CFR 61.09, 61.10(c) and 61.94(c).

e. At all times, the Permittee shall also, to the extent practicable, maintain and operate the plant, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions.

5. Pursuant to 35 Ill. Adm. Code 216.121, no person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 10 mmBtu/ hour to exceed 200 ppm, corrected to 50 percent excess air.

6. This permit is issued based on the cavity processing operations not being subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Area Source Standards for Plating and Polishing Operations, 40 CFR 63 Subpart WWWWWW because the source does not use or have emission sof compounds of one or more plating and polishing metal HAPs, listed in 40 CFR 63.11504.

7a. Emissions and operation of equipment shall not exceed the following limits:

		EMISSIONS			
		Volatile Organic			
Item of	Operating Hours	Material		Particulate Matter	
Equipment	(Hours/ Year)	(Lbs/ Hr)	(Tons/ Yr)	(Lbs/ Hr)	(Tons/ Yr)
Debonding Oven	1,664	1.77	0.88	0.55	0.46

These limits are based on 35 Ill. Adm. Code 212.321. VOM emission limits are based on stack test results as provided in permit application. Compliance with annual limits shall be determined from a running total of 12 months of data.

b. The afterburner shall maintain an operating temperature of not less than 1400º F and a control efficiency of not less than 99%.

8. Operation and emissions of the Cavity Processing Facility shall not exceed the following limits:

		Emissions	
Pollutant	(lbs/ hour)	(tons/ month)	(tons/ year)

Nitrogen Oxides (NOx)	0.13	0.06	0.58
Particulate Matter (PM)	0.02	0.004	0.042

These limits are based on a maximum of 2,000 hours/ year operation of the BCP process and a maximum 5,000 hours/ year operation of the EP process and the information provided in the application. Compliance with annual limits shall be determined from a running total of 12 months of data.

9. Emissions and operation of the two boilers shall not exceed the following limits:

a. The 15 mmBtu/ hour boiler shall not exceed the following:

Natural Gas Usage: 11.2 mmscf/ month, 132 mmscf/ year

Pollutant	Emission Factor (Lbs/ mmscf)	Emissions (Ton/ Mo)	(Ton/ Yr)
NOx	100.0	1.32	13.2
CO	84.0	1.11	11.1
PM	7.6	0.10	1.0
VO	5.5	0.07	0.7

These limits define the potential emissions of NOx, CO, PM, and VOM and are based on maximum fuel usage and standard emission factors. Compliance with annual limits shall be determined from a running total of 12 months of data.

b. The 11.55 mmBtu/ hour boiler shall not exceed the following:

Natural Gas Usage: 10.0 mmscf/ month, 99.25 mmscf/ year

Pollutant	Emission Factor (lb/ mmscf)	Emissions (tons/ month)	(tons/ year)
Nitrogen Oxides (NOx)	32*	0.16	1.59
Carbon Monoxide (CO)	84	0.417	4.17
Sulfur Dioxide (SO2)	0.6	0.003	0.03
Particulate Matter (PM)	7.6	0.038	0.38
Volatile Organic Material (VOM)	5.5	0.027	0.27

*The emission factor for flue gas recirculation is used. This boiler is constructed with flue gas recirculation.

c. Natural Gas shall be the only fuel used in the two boilers. Use of any other fuel other than natural gas requires a permit change.

10. This permit is issued based on negligible emissions of VOM from the gasoline dispensing storage tank. For this purpose, emissions shall not exceed nominal emission rates of 0.1 lb/ hour and 0.44 tons/ year.

11. VOM usage and emissions of the Main Injector Particle Production Gas System shall not exceed 110 lbs/ mo and 0.66 tons/ year. These limits are based on the maximum hourly VOM usage and maximum hours of operations (8,760 hrs/ yr).

12. Pursuant to 35IAC218.301, no person shall cause or allow the discharge of more than 8 lbs/ hour of organic material into the atmosphere from any emission source, except as provided by the following

exception: If no odor nuisance exists this limitation shall apply only to photochemically reactive material.

13. This permit is issued based on the potential to emit (PTE) for Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act shall be less than 10 tons/ year of any single HAP and 25 tons/ year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements to obtain a Clean Air Act Permit Program Permit (CAAPP).

14. In the event that the operation of this emission unit results in an odor nuisance, the Permittee shall take appropriate and necessary action to minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the odor nuisance.

15a. The only fuel fired in the Emergency Engine-Generator shall be distillate fuel oil (No. 1 and 2 oil).

b. The total annual consumption of fuel by the standby engine-generator shall not exceed 5,000 gallons/ month and 60,000 gallons/ year.

c. At the above location, the Permittee shall not keep, store, or utilize:

i. Distillate fuel oil (Grades No. 1 and 2) with a sulfur content greater than the larger of the following two values:

1. 0.28 weight percent, or

2. The wt. Percent given by the formula: Maximum wt. Percent sulfur = (0.000015) x (Gross heating value of oil, Btu/ lb).

d. Emissions and operation of the engine-generator shall not exceed the following limits:

Pollutant	Emission Factors (Lb/ Hp*Hr)	Monthly Limits (Tons/ Month)	Annual Limits (Tons/ Year)
NOx	0.024	1.11	13.32
CO	0.0055	0.25	3.05
SO_2	0.0004	0.02	0.22
VOC	0.00071	0.03	0.39
PM	0.0007	0.03	0.39

These limits are based on standard AP-42 emission factors and information provided in the permit application, a maximum of 120 gallons per hour of fuel usage, a heat content of 137,000 Btu/ gallon, and maximum operation of 500 hours per year for the engine-generator. Compliance with annual limits shall be determined from a running total of 12 months of data.

e. The Permittee shall comply with the applicable requirements of 40 CFR Part 63 Subpart ZZZZfor the emergency generator.

16. The Illinois EPA shall be allowed to sample all fuels stored at the above location.

17. The gasoline tank shall be equipped and operated with a submerged loading pipe, pursuant to 35 IAC 218.122 (b) and 218.583(a)(1).

b. All tank vent pipes shall be equipped with pressure/ vacuum relief valves with the following design specifications:

i. The pressure/ vacuum relief value shall be set to resist a pressure of at least 3.5 inches of water column and to resist a vacuum of no less than 6.0 inches of water column; or

ii. The pressure/ vacuum relief valve shall meet the requirements of Section 218.586(c).

18. The permittee shall implement the following with respect to the Stage I Vapor Balance System:

a. Maintain and operate the system in accordance with the established procedures and instructions. [35 IAC 218 583 (d) (1)]

b. Maintain gauges, meters, or other specified testing devices in proper working order [35 IAC 218.583(d)(3)]

c. Operate the vapor balance system and delivery vessel unloading points in a manner that prevents:

f. A reading equal to or greater than 100 percent of the lower explosive limit (LEL measured as propane) when tested in accordance with the procedure described in EPA 450/ 2-78-051 Appendix B, and

ii. Avoidable leaks of liquid during the filling of storage tanks. [35 IAC 218.583 (d) (4)]

d. Repair, replace, or modify any worn out or malfunctioning component or element of design. [35 IAC 218.583(c)(3)]

e. Within 15 business days after discover of the leak, repair and retest a vapor balance system which exceeds the above limits in Condition 14©. [35 IAC 218.583(d)(5)]

f. Provide instructions to the personnel operating the gasoline dispensing facility describing necessary maintenance operations and procedures for prompt notification of the Permittee in case of any malfunction of a vapor balance system. [35 IAC 218.583(c)(2)]

19. The Permittee shall operate a Stage II vapor collection and control system which is properly installed and maintained as provided below, whenever vehicles are fueled with gasoline, pursuant to 35 IAC 218.586(c):

a. The vapor collection and control system has been CARB certified.

b. The vapor collection and control system is maintained in accordance with the manufacturer's specifications and the certification.

c. No elements or components of a vapor collection and control system are modified, removed, replaced, or otherwise rendered inoperative in a manner which prevents the system from performing in accordance with its certification and design specifications.

d. The vapor collection and control system has no defective, malfunctioning, or missing components.

e. Personnel operating the gasoline dispensing facility are trained and instructed in the proper operation and maintenance of a vapor collection and control system.

f. Instructions are posted in a conspicuous and visible place within the motor fuel dispensing area and describe the proper method of dispensing motor vehicle fuel with the use of vapor collection and control system.

20. Personnel operating the gasoline dispensing facility shall operate in accordance with the Permittee's instructions and shall promptly notify responsible maintenance personnel or their supervisor of any scheduled maintenance or malfunction requiring replacement or repair of a major component of a vapor balance system. [35 IAC 218.583(d)(1) and (2)]

21. The Permittee shall only allow delivery vessels that display a current sticker showing that they are leak-tight to unload gasoline at the facility. [35 IAC 218.583(a)(2)(C)]

22a. The Permittee shall maintain monthly records of total gasoline throughput (gallons/ month).

b. The Permittee shall keep an inspection, maintenance, and repair log for the gasoline dispensing facility that shall list activities performed that relate to the control of emissions, with date, description and responsible individual.

c. The Permittee shall maintain the following records with respect to the gasoline dispensing facility:

i. A copy of the registration information submitted to the Illinois EPA pursuant to 35 IAC 218.586(h).

ii. Records that clearly demonstrate:

A. That a certified Stage II vapor collection and control system has been installed and tested to verify its performance according to its specifications.

B. That proper maintenance has been conducted in accordance with the manufacturer's specifications and requirements.

C. The time period and duration of all malfunctions of the vapor collection and control system.

D. The motor vehicle fuel throughput of the operation for each calendar month of the previous year.

E. That personnel operating the gasoline dispensing facility are trained and instructed in the proper operation and maintenance of the vapor collection and control system informed as to the potential penalties associated with the violation of provisions of 35 IAC 218.586.

25. The permittee shall maintain monthly records of the following items:

a. The amount of natural gas burned in the two boilers (mmscf/ mo and mmscf/ yr);

b. Hours of operation of the debonding oven (hrs/ mo and hrs/ yr);

c. The hours of operation of the EP process and the BCP process (hours/ month and hours/ year);

d. VOM usage in MIPP Gas System (lbs/ month and tons/ year);

e. Quantity and percent concentration of nitric acid used (gallons/ month and gallons/ year);

f. The amount of gasoline dispensed (gallons/ month and gallons/ year); and

g. PM, NOx, CO, SO2, VOM, and HAP emissions with supporting calculations (tons/ month and tons/ year).

24a. The Permitee shall maintain records of the following items to address compliance with the limits in Condition 15:

i. Records of the sulfur content of the fuel oil for each shipment of fuel oil received, percent by weight.

ii. Hours of operation for the engine-generator (hours/ month and hours/ year).

iii. Monthly and annual records of fuel consumption by the engine-generator (gallons/ month and gallons/ year).

iv. Monthly and aggregate annual emissions of NOx, CO, SO_2, VOC, and PM in tons/ month and tons/ year of the engine-generator, with supporting calculations.

b. The Permittee shall keep a maintenance and repair log for the engine-generator, listing significant activities performed with date.

25. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Illinois EPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of a source inspection.

26. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

27. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

28. Persons with lifetime operating permits must obtain a revised permit for any of the following changes at the source:

a. An increase in emissions above the amount the emission unit or the source is permitted to emit;

b. A modification;

c. A change in operations that will result in the source's noncompliance with conditions in the existing permit; or

d. A change in ownership, company name, or address, so that the application or existing permit is no longer accurate.

Please note that this permit has been revised to no longer include operations of one 15 mmBtu/ hour boiler, open top vapor degreaser and collider detector facility per Permittee request.

If you have any questions concerning this permit, please contact Valeriy Brodsky at 217/ 785-1705.

Edwin C. Bakowski, P.E. Date Signed: 4/ 24/ 2012

Manager, Permit Section
Division of Air Pollution Control

ECB:VJB:jws
cc: Region 1